REMARKS/ARGUMENTS

Claims 1, 3-4, 18 and 20-24 are pending in the Application. Claims 1, 3-4 and 18 have been rejected as anticipated by or, in the alternative, as obvious over Kanno et al. (U.S. Patent No. 5,918,817). Claims 1, 3-4 and 18 have been rejected as being unpatentable over Izumi et al. (U.S. Publication No. 2003/0170988) as evidenced by Kanno. Finally, Claims 20-24 have been rejected as being unpatentable over Kanno in view of Izumi.

No amendments to the claims are deemed necessary herein. Provided with this response is a Declaration of Masanobu Sato under 37 C.F.R. §1.132 ("Sato Declaration") filed in support of the patentability of the present invention. Sato Declaration provides evidence of the level of skill of one of ordinary skill in the art at the time of the invention. It is submitted to traverse the Examiner's finding(s) that several of the pending claims are "obvious" to one having ordinary skill in this art pursuant to 35 USC §103. Reconsideration is respectfully requested as the remarks presented herein, taken in conjunction with the evidence contained in the Sato Declaration, are believed to overcome all of the grounds for rejection of the present claims set forth in the March 19, 2008 Office Action issued in this case.

Claim 1 recites a <u>volume median</u> droplet diameter being in the range of $10\mu m$ to $16\mu m$. "Volume median diameter" is a term of art defined in the specification as "a liquid droplet diameter such that the sum of volumes of liquid droplets having diameters greater (or smaller) than that liquid droplet diameter accounts for 50% of the total volume of all the observed liquid droplets." See, Specification, page 6, line 24 - page 7, line 4. The Examiner has cited Kanno et al. (column 14, lines 17-33), which discloses that sizes of the droplets generated by the disclosed nozzles are "about $20\mu m$, about $10\mu m$, about $5\mu m$ and about $2\mu m$." As evidenced by the Sato Declaration, at the time of the present invention, it was not known in the art to represent a diameter of generated treatment droplets in terms of a "volume median diameter." Therefore, the diameters of "about $20\mu m$, about $10\mu m$, about $5\mu m$ and about $2\mu m$" taught by Kanno et al. or the diameters disclosed in Izumi would have been understood as arithmetic mean diameters and not "volume median diameters," as required by Claim 1.

Further, as previously explained by Applicants, two-fluid jet nozzles of Kanno generate droplets having a broad diameter distribution. In the case of a broad diameter distribution, a value of the arithmetic mean diameter does not correspond to a value of the volume median diameter. For example, assuming a group of three droplets with diameters 1μm, 10μm and 100μm (i.e., a group having a broad diameter distribution), respectively, the arithmetic mean equals 37μm and the volume median equals 79μm. Therefore, an arithmetic mean diameter of a group having a broad diameter distribution cannot anticipate or render obvious the volume median diameter.

Therefore, the 10μm-16μm volume median diameter range of Claim 1 is not taught or suggested by either Kanno et al. or Izumi et al., even if Izumi et al. suggests a diameter range of 5μm to 20μm.
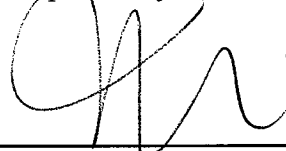
Furthermore, as evidenced by the Sato Declaration, Izumi et al. teaches a bi-fluid nozzle producing droplets of the pretreatment liquid, each droplet having "a diameter of about 5μm to about 20μm." Because the diameter of each droplet is limited to the range of about 5μm to about 20μm, a volume median diameter of the Izumi distribution cannot be smaller than about 5μm and cannot be greater than about 20μm.

In view of the foregoing, allowance of claims 1, 3-4, 18 and 20-24 is requested.

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